

Appl. No. 10/576,672
Amdt. Dated March 12, 2009
Reply to Office Action of November 13, 2008

•••REMARKS/ARGUMENTS•••

The Official Action of November 13, 2008 has been thoroughly studied. Accordingly, the following remarks are believed to be sufficient to place the application into condition for allowance.

By the present amendment claims 1 and 2 have been amended to limit the R to an alkyl group having 6-10 carbon atoms.

Support for this limitation can be found in applicants' examples.

In addition claim 2 has been amended to recite the "elastic" body.

Entry of the changes to the claims is respectfully requested.

Claims 1-6 are pending in this application.

Claims 2, 4 and 6 were rejected under 35 U.S.C. §112, second paragraph.

Under this rejection the Examiner noted that it was unclear what the phrase "the body" referred to.

In response to this rejection, claim 2 has been amended to recite the "elastic" body.

Claims 1-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0068797 to Ikemoto et al. in view of U.S. Patent No. 4,833,195 to Adur et al. and U.S. Patent Application Publication No. 2004/0226393 to Hong.

For the reasons set forth below, it is submitted that each of the pending claims are allowable over the prior art of record and therefore, the outstanding rejection of the claims should properly be withdrawn.

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Favorable reconsideration by the Examiner is earnestly solicited.

The Examiner has relied upon Ikemoto et al. as disclosing:

...a rubber composition comprising 1) a rubber compound composed of at least one of an ethylene-propylene-diene (EPDM) terpolymer and an ethylene-propylene (EPM) copolymer, 2) a peroxide vulcanizing agent, 3) a resorcinol-based compound, and 4) a melamine resin (§0008-0011) (claims 1, 2). Example 1 of Ikemoto discloses a rubber composition comprising 100 parts of ESPRENE 501A, an EPDM rubber having a Mooney viscosity (ML 100°C) of 43 and comprising 50% ethylene, 4% diene, and, by extension, 46% propylene and 4.2 parts di-t-butyl peroxy-diisopropylbenzene as a peroxide vulcanizing agent (§0038) (claims 1, 2). Example 7 of Ikemoto discloses a rubber composition prepared in a manner similar to Example 1, except ESPRENE 201, an EPM rubber having a Mooney viscosity (ML 100°C) of 43, was used instead of EPDM. Ikemoto teaches that the rubber compositions of US20020068797 may be used as rubber vibration insulators (§0036).

As stated above, Ikemoto recites that the rubber compound is composed of at least one of EPDM and EPM; Ikemoto therefore teaches the use of a rubber composition comprising a blend of EPDM and EPM. The examiner therefore takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare a blend rubber comprising ESPRENE 501A and ESPRENE 201 to prepare a rubber composition as described in US20020068797 (claim 2).

The Examiner concedes that Ikemoto et al.:

...fails to teach the addition of an α -olefin oligomer having a number average molecular weight of 300-1400 to EPDM/EPM, as recited in the instant claims.

The Examiner has accordingly relied upon Adur et al. as disclosing:

...a thermoplastic pelletizable polymer composition comprising an oligomer or degraded polyolefin and an olefinic elastomer (Column 2, lines 61-63), with the oligomer and elastomer being combined in a ratio from 90:10 to 20:80 (Column 4, lines 57-60) (claims 1, 2). Said oligomer may be prepared from one of more suitable α -olefins such as 1-hexene, and is characterized by a number average molecular weight less than 15,000 (Column 3, lines 19-30) (claims 1, 2). Ethylene-propylene copolymers and ethylene-propylene-diene terpolymers are suitable for use as the

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olefinic elastomer (Column 4, lines 18-26). Adur discloses that the combination of the low molecular weight oligomer with the olefinic elastomer results in a composition having a high melt flow (Column 3, lines 4-15).

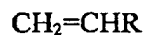
In combining the teachings of Ikemoto et al. and Adur et al. the Examiner takes the position that:

...it would have been obvious....to modify the rubber composition of Ikemoto by the addition of an oligomer of a polyolefin such as 1-hexene having a number average molecular weight less than 15,000, as taught by Adur, for the purposes of improving the melt flow of the rubber composition.

Applicants claim an EPDM composition which comprises

- (a) EPDM (or at least one of EPDM and EPM);
- (b) an α -olefin oligomer, which is a polymer of α -olefin represented by the following

general formula:



, where R is an alkyl group having 6-10 carbon atoms, with a number average molecular weight Mn of 300-1,400; and

- (c) an organic peroxide cross-linking agent.

Ikemoto teaches a composition for reinforced automobile hoses that includes:

- A) or a least one of EPDM and EPM;
- B) a peroxide vulcanizing agent;
- C) a resorcinol-based compound; and

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D) a melamine resin.

The resorcinol-based compound and the melamine resin are used by Ikemoto et al. in order to avoid the use of an adhesive which has a number of disadvantages, including a short pot life, poor sealing performance if the coating of adhesive is uneven, and a more complicated manufacturing process. (See paragraph [0005])

Ikemoto et al. teaches that the resorcinol-based compound functions as an adhesive (in conjunction with the melamine resin) and the melamine resin functions as an "adhesive adjuvant."

Ikemoto et al. refer to the composition as being an "adhesiveless" composition. (See paragraph [0059])

In Comparative Examples 1-3 Ikemoto et al. demonstrate that when the resorcinol-based compound and the melamine resin are left out of the composition, the desired adhesiveness is absent.

In addition to components A-D Ikemoto et al. also teach including a process oil (has relied upon by the Examiner).

However, as conceded by the Examiner, Ikemoto et al. fails to disclose an α -olefin oligomer.

While applicants' composition claims are open-ended by the term "comprises" is nevertheless noted that applicants' composition provides for an elastic body that, when used in a damper, provides good balance between changes in spring constant at low temperatures such as -30°C and damping characteristics in the normal temperature use range. These unique characteristics/properties are demonstrated in applicants' working examples.

In contrast to applicants' composition, there is no teaching or suggestion in Ikemoto et al. that the compositions of Ikemoto et al. (which include the additional resorcinol-based compound and

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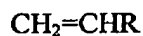
melamine resin) provide the advantages that applicants' compositions provided and particularly the dampening characteristics/properties.

The Examiner has relied upon Adur et al. as disclosing a thermoplastic pelletizable polymer composition comprising an oligomer or degraded polyolefin and an olefinic elastomer.

At column 3, lines 19-23 Adur et al. teach:

The polyolefin oligomer suitable for use in the present invention can be made from one or more suitable alpha-olefin monomers such as hexene-1, pentene-1, isopentene, ethylene, propylene, butene-1, isobutene, 4-methylpentene-1, butadiene, and mixtures thereof.

However, the α -olefin oligomer of the present invention is a polymer of α -olefin represented by the following general formula:



where R is an alkyl group having 6-10 carbon atoms, with a number average molecular weight M_n of 300-1,400.

Such α -olefin oligomers are more than octane-1.

Adur et al. does not teach limiting the α -olefin oligomers to alkyl groups having 6-10 carbon atoms.

At column 3, lines 23-26 Adur et al teaches:

For purposes of this invention, an "oligomer" is defined as a macromolecular substance that has a number average molecular weight less than about 15,000

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In applicants' Comparative Example 5, an α -oligomer having a number average molecular weight of 2,000 (within Adur et al.'s range of "less than about 15,000) was tested and found to not provide improvements in low-temperature characteristics.

Thus, Adur et al. fails to teach or suggest applicants' claimed α -olefins on the basis of number average molecular weight and on the basis of the number of carbon atoms of the alkyl group in the α -olefin of the polyolefin oligomers.

In addition to the above distinctions, the following is noted.

Ikemoto et al. is directed at providing a rubber composition that be used for making reinforced automobile hoses.

Adur et al. is directed to a thermoplastic pelletizable polymer composition that, when converted into a film or fabric, meets "criteria or drapability, low hardness on the Shore A scale, high melt flow and reprocessability."

There is no nexus between the teachings of Ikemoto et al. and Adur et al. which renders these diverse teaching analogous.

The Examiner has stated that:

Both Ikemoto and Adur are directed towards the processing of EPDM/EPM and fabrication of articles from those elastomers.

This justification - that both references teach: 1) processing of EPDM/EPM; and 2) fabrication of articles from EPDM/EPM - is much too broad.

Moreover, the articles fabricated by Ikemoto et al. and Adur et al. are not at all similar, and do not involve similar properties or characteristics.

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How is a combustion engine cooling system hose similar to a fabric that Adur et al. teaches is useful as facings or top sheets in diapers, incontinent pads, bed pads, sanitary napkins, hospital gowns, and the like?

What properties or characteristics render these diverse articles similar so that one skilled in the art would apply the teachings of one to the other?

Note at column 2, lines 46 *et seq.* Adur et al. specifically refers to "fabric technology."

One skilled in the art of reinforced rubber automobile hoses (Ikemoto et al.) would not look to the fabric technology art (Adur et al.) and, at that, choose a teaching on improving "drapability" of fabrics or sheets and apply that teaching to reinforced rubber automobile hoses.

The test for determining whether a prior art reference is analogous is if it is either in the same field of endeavor as the invention, or reasonably pertinent to the problem addressed by inventor.

In applying this test, it is clear that neither applicants' invention (a damper for absorbing vibrations of a rotating shaft) nor Ikemoto et al.'s invention (reinforced rubber automobile hoses) is in the same endeavor as Adur et al. or reasonably pertinent to any problem solved by applicants or Ikemoto et al. (neither being at all related to drapability).

Thus, it is submitted that there is no real motivation to combine the teachings of Ikemoto et al and Adur et al. as the Examiner proposes.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

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It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejection of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

The prior art cited on page 6 of the Office Action has been noted but is not deemed to be particularly pertinent to applicants' claimed invention.

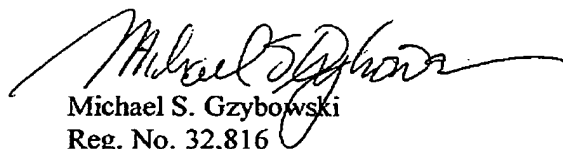
If upon consideration of the above, the Examiner should feel that there remains outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of

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time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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